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UNITED STATES DEPARTMENT OF AGRICULTURE  
AGRICULTURAL ADJUSTMENT ADMINISTRATION  
DIVISION OF MARKETING AND MARKETING AGREEMENTS



ECONOMIC STATEMENT RELATING TO THE MARKETING OF CELERY

SHIPPED FROM WESTERN WASHINGTON

Prepared by C. I. Tod, Associate Agricultural Economist, for use in considering the inclusion of celery in a marketing agreement which now applies to lettuce, peas, and cauliflower in western Washington.

General Crops Section  
Economic Analysis Unit

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ECONOMIC STATEMENT RELATING TO THE MARKETING OF CELERY

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Summary and Conclusions

1. Western Washington celery is grown in two localized areas, one near the city of Seattle and the other near Portland, Oregon. Acreage, production, and shipments have increased markedly since 1928, when commercial production first became important. In 1937, 950 acres were grown, which produced 456,000 Washington half crates, and 351 straight carlots were shipped.

2. The shipping season covers four months, August through November, with 85 percent normally moving in September and October.

3. Destinations of Washington celery shipments are primarily found in west central and southern states. There is active competition for these markets by celery grown in other commercial areas.

4. About 25 percent of Washington celery production is shipped out of the state in straight carlots. An additional quantity is moved out of the state in cars of mixed vegetables and by motor truck. Accurate data on the quantity so shipped are not available at present.

5. In determining parity prices, data are not available during the pre-war period (1909-14). Data for such portion of the 1919-1929 post-war base as was available were used.

Prices to growers have been substantially below parity during 1936 and 1937. Parity price in 1937 was \$1.47 per crate, the actual price received was \$1.10, which is approximately 75 percent of parity.

6. When it is reasonably clear that poor quality celery when sold in terminal markets will cause a loss of cash outlays, it would be of direct

benefit to growers to limit such celery from moving into interstate commerce. Restriction of quantity by proration, because of the large amounts of competitive celery available, would not be advantageous.



ECONOMIC STATEMENT RELATING TO THE MARKETING OF CELERY

SHIPPED FROM WESTERN WASHINGTON

Acreage, Yield, and Production

Production of celery on a commercial scale is a comparatively recent industry in western Washington. Acreage has increased steadily from 100 acres in 1928 to 950 acres for 1937. The latter amount represents only 2 percent of total United States acreage.

There are two producing sections in western Washington, both very localized. The more important one is near the city of Seattle, which provides all the carlot shipments from the state as well as supplies for local consumption. About 80 percent of the shipments originate in King County (Seattle) and 20 percent in the near-by part of Pierce, an adjoining county. There is a smaller producing section in Clark County just outside the city of Portland, Oregon. It supplies local markets only, but because of its location across the state line from a large city, most of its product moves in interstate commerce.

Washington celery is grown on fertile soil, runs to very large sizes (2-1/2 to 3-1/2 dozen stalks per crate), and averages the highest yield per acre of all states except Idaho. However, yields have declined in recent years, and production increases have not kept pace with acreage increases. Production increased from 64,000 one-half crates (Washington) in 1928, to 456,000 in 1937. With approximately 2 percent of the acreage in 1937, Washington produced about 3 percent of total United States celery.

More complete figures on acreage, yield, and production may be found in table I.

Table I

Washington Celery  
Acreage, Yield and Production  
Seasons 1928 to 1937

Season	Acreage	Yield	Production	
			New York Two-	Washington
			Thirds Crates	One-half Crates
	1	2	3	4
	<u>acres</u>	<u>crates/1</u>	<u>1,000</u>	<u>1,000</u>
		<u>per acre</u>	<u>crates</u>	<u>crates</u>
1928	100	500	50	64
1929	250	500	125	160
1930	250	500	125	160
1931	300	500	150	192
1932	300	500	150	192
1933	310	450	140	179
1934	380	500	190	244
1935	550	350	192	246
1936	850	390	332	426
1937	950	375	356	456

Rank of States in Acreage and Production, 1937

States & Rank	Acreage	Percent of Total	Production	Percent of Total
	1	2	3	4
	<u>acres</u>	<u>percent</u>	<u>1,000</u>	<u>percent</u>
			<u>crates/1</u>	
1. California	14,700	36	3,603	35
2. Florida	7,500	18	2,100	20
3. Michigan	6,100	15	1,254	12
4. New York	4,700	12	1,398	13
5. New Jersey	1,800	4	381	4
6. Ohio	1,300	3	267	3
7. Colorado	1,200	3	324	3
8. Pennsylvania	1,000	2	300	3
9. Washington	950	2	356	3
10. Oregon	520	1	234	2
11. Utah	500	1	115	1
12. Indiana	270	1	52	--
13. Idaho	50	--	25	--
Total	40,590		10,409	

/1. New York two-thirds crate, the Washington one-half size crate has 78 percent of the capacity of the New York two-thirds crate.

Source of data: U. S. Dept. Agr., Bur. Agr. Econ., Crop Reporting Board  
Commercial Truck Crops for Shipment.



### Shipments

The shipping season for Washington celery extends for four months, August through November. An occasional car is shipped as early as the close of July, and as late as early December. From 1928 through 1934 (with the exception of 1933), heaviest shipments occurred during November. During the last three seasons, 1935-1937, there has been a definite shift to earlier shipments, October being the most important month, with September second. It is now normal for about 85 percent of all shipments to move in September and October.

Carlot shipments by rail increased from 14 cars in 1928 to 351 cars during 1937, and comprised about 2 percent of the total United States shipments during 1937. Detailed figures may be found in table II.

### Shipments from Other States

Twelve states shipped celery in solid carlots during 1937, and of these Washington is sixth in rank, being exceeded by Florida, California, New York, Michigan, and Oregon.

Even during Washington's peak season, the amount it furnishes markets is not large. In September, 1937, Washington was third in importance, exceeded by New York and Oregon, and had 10 percent of total shipments, Washington was third in October with 11 percent of total shipments, being exceeded by New York and California.

All states which produce celery commercially are shipping at this time of year with the exception of Florida. Most of the production in eastern states moves to market by truck, and these additional shipments are not included in the published figures.

Data relating to celery shipments from all states for 1937 are contained in table III.

Table II  
Washington Celery, Monthly Carlot Shipments  
1928 to 1937 Seasons

Season	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
	1	2	3	4	5	6	7
	<u>cars</u>	<u>cars</u>	<u>cars</u>	<u>cars</u>	<u>cars</u>	<u>cars</u>	<u>cars</u>
1928	--	--	--	3	11	--	14
1929	--	--	3	3	42	3	51
1930	--	--	1	8	9	1	19
1931	--	17	12	18	22	1	70
1932	--	5	10	14	25	8	62
1933	2	22	13	22	16	2	77
1934	4	29	27	23	88	--	171
1935	--	26	67	131	--	--	224
1936	3	32	68	226	13	--	342
1937	1	28	105	187	30	--	351

Source of data: U. S. Dept. Agr., Bur. Agr. Econ., Carlot Shipments of Fruits and Vegetables by Commodities, States and Months.



Table III

Washington Celery: Rank of States in Carlot Shipments, 1937

Calendar Year			September			October		
State	Cars	Percent of Total	State	Cars	Percent of Total	State	Cars	Percent of Total
1	2	3	4	5	6	7	8	9
	<u>cars</u>	<u>percent</u>		<u>cars</u>	<u>percent</u>		<u>cars</u>	<u>percent</u>
1. Florida	9,170	42	1. New York	747	71	1. New York	783	46
2. California	8,753	40	2. Oregon	106	10	2. California	459	27
3. New York	2,396	11	3. Washington	105	10	3. Washington	187	11
4. Michigan	533	2	4. Michigan	90	9	4. Oregon	148	9
5. Oregon	497	2	5. California	3		5. Michigan	108	6
6. Washington	351	2	6. Idaho	1		6. Idaho	7	1
7. Utah	33					7. Utah	6	1
8. Virginia	23		Total	1,052	100	8. Colorado	2	1
9. Idaho	10	1				Total	1,700	100
10. Louisiana	7							
11. Colorado	4							
12. New Jersey	1							
Total	21,778	100						

Source of data: U. S. Dept. Agr., Bur. Agr. Econ., Carlot Shipments of Fruits and Vegetables by Commodities, States and Months.

### Distribution

Commercial production of celery is confined to the following states: in the west, Washington, Oregon, Idaho, California, Utah, and Colorado; in the east, New Jersey, Pennsylvania, New York, Ohio, Michigan, and Indiana; and in the south, Florida, whose shipping season does not in any way conflict with that of Washington.

There is, therefore, a large deficit area in the West Central and Southern States with markets which are available for Washington celery, and the bulk of the shipments from Washington go to this area. During the ten years, 1928 to 1937, 44 percent of the shipments were consumed in the West North Central States, 27 percent in the West South Central States, 11 percent in the East North Central States, 10 percent in the South Atlantic States, and 8 percent in all other states.

Principal cities which receive celery in carlots from Washington State are the following in order of importance: Minneapolis and St. Paul, Kansas City, Chicago, Tampa, Dallas, New Orleans, Fort Worth, Houston, Omaha, and San Antonio.

Table IV gives the unloads of Washington celery by geographic divisions from 1928 through 1937.

### Marketing Practices.

The field office of the General Crops Section reports seven shipping organizations which handle Washington celery. Two of these are cooperatives, who handle for the account of growers and control approximately 48 percent of total shipments. The other five handlers are independent shippers who pay cash to growers.

The celery is rough packed in the field by the growers. The packed



Table IV  
Unloads of Washington Celery by Geographic Regions  
1928 to 1937 Seasons and 10-Year Average

Region	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	10-Year Average
	1	2	3	4	5	6	7	8	9	10	11
Pacific/1	3	3	--	7	5	--	--	1	6	5	3
Mountain/2	--	--	--	--	--	--	--	--	--	--	0
West N. Central/3	5	12	9	12	9	10	70	82	148	150	51
West S. Central/4	--	8	3	6	16	31	21	48	78	99	31
East N. Central/5	--	6	4	15	4	13	11	17	27	35	13
East S. Central/6	--	--	--	--	--	--	5	10	--	10	3
Middle Atlantic/7	--	7	--	9	--	8	7	--	--	2	3
South Atlantic/8	--	1	--	7	21	13	12	20	12	22	11
New England	1	--	--	1	--	1	--	--	--	--	0
Total	9	38	16	57	55	76	126	178	271	323	115
						percent					
Pacific/1	33	8	--	12	9	--	--	1	2	2	3
Mountain/2	--	--	--	--	--	--	--	--	--	--	--
West N. Central/3	56	32	56	21	16	13	56	46	55	46	44
West S. Central/4	--	24	19	10	29	41	17	27	29	31	27
East N. Central/5	--	16	25	26	7	17	9	10	10	11	11
East S. Central/6	--	--	--	--	--	--	4	6	--	3	3
Middle Atlantic/7	--	18	--	16	--	10	6	--	--	1	3
South Atlantic/8	--	3	--	12	38	17	10	11	4	7	10
New England	11	--	--	2	--	1	--	--	--	--	--
Total	100	100	100	100	100	100	100	100	100	100	100

1. Washington, Oregon and California.
2. Idaho, Montana, Wyoming, Nevada, Utah, Colorado, Arizona and New Mexico.
3. North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa and Missouri.
4. Oklahoma, Texas, Arkansas and Louisiana.
5. Wisconsin, Illinois, Michigan, Indiana and Ohio.
6. Kentucky, Tennessee, Mississippi and Alabama.
7. New York, Pennsylvania and New Jersey.
8. West Virginia, Maryland, Delaware, Virginia, North Carolina, South Carolina, Georgia and Florida.

Source of Data: U. S. Dept. Agr., Bur. Agr. Economics, Division of Fruits and Vegetables.

crate is usually washed in order to remove outside dirt. The handler assembles the celery from several growers, loads it into the car, and arranges for the distribution and sale of the celery.

Most of the celery is graded according to United States standards. However, shipping point inspection declined from 100 percent in 1933 to about 30 percent of total shipments in 1937.

Only a small proportion of the shipments are consigned, nearly all being sold f.o.b. or on a delivered, acceptance basis, with terminal market inspection. Nearly all cars are shipped under standard refrigeration.

#### Interstate Commerce

Total production in 1937 was 456,000 crates. The standard loading per car is 312 crates, and 351 cars were shipped, which indicates 110,000 crates shipped in straight cars. All of these shipments moved into interstate commerce, amounting to 24 percent of the production.

In addition, some celery is shipped in cars of mixed vegetables, and a considerable quantity moves into near-by states by truck. It is reasonable to estimate that about 50 percent of the production moves into interstate commerce, although no accurate figures are available at present.

#### Costs

Costs to growers for production average approximately 35 cents per crate, and the field pack amounts to an additional 30 cents, making a total grower cost of 65 cents.

Handlers' costs amount to about 16 cents for loading the car, \$1.09 for freight and refrigeration to the Twin Cities or Kansas City, and 15 cents for selling charges, which makes a total of \$1.40. Freight and refrigeration



costs 7 cents more to Chicago, St. Louis, and contiguous territory. During 1938 there will be an increase in costs due to higher freight rates of approximately 5 cents per crate.

Average costs estimated for the 1937 season are shown in table V.

Prices Received by Farmers, and Purchasing Power Parity Prices

It is stated in Section 2 of the Agricultural Marketing Agreement Act of 1937 that it is the policy of Congress ".....to establish and maintain such orderly marketing conditions for agricultural commodities in interstate commerce as will establish prices to farmers at a level that will give agricultural commodities a purchasing power with respect to articles that farmers buy, equivalent to the purchasing power of agricultural commodities in the base period;.....and authorizing no action under this title which has for its purpose the maintenance of prices to farmers above this level."

The base period is specified as August 1909 to July 1914. As the western Washington celery industry did not exist during those years, no prices are available. Section 8e of the Act provides for this contingency by allowing the post-war period, August 1919 to July 1929, or any available part of this period to be used as the base period when figures are not available during the pre-war base.

The first year's price available is for the season 1928, and this price provides the base as shown in table VI.

During the eight years, 1930 to 1937, the purchasing power has been below the equivalent for the base period during five seasons and above during three seasons.

In 1936 and 1937, prices to farmers have been below parity. In 1936, \$1.40 per crate would have bought an equivalent amount of goods as did \$1.75

Table V

Estimated Average Costs of Production, Harvesting and  
Marketing Western Washington Celery  
Season of 1937

Item	Dollars per Crate
<u>Costs to Grower</u>	
Land Rent	.05
Fertilizer	.06
Spray Materials	.02
Labor	.20
Miscellaneous	.02
Cost of Production	.35
Harvesting and Packing	.09
Crates, assembled	.14
Hauling Empty Crates	.015
Hauling Packed Crates	.05
Cost of Harvesting	.295
Total Grower Cost	.645
<u>Handler's Charges</u>	
Assembling Supplies, Loading Car, and Overhead Inspection/1	.15 .005
Handling Cost	.155
Freight	.90
Refrigeration	.19
Transportation Cost/2	1.09
Local Selling Expense	.03
Local Brokerage/3	.04
Terminal Brokerage	.08
Selling Cost	.15
Total Charges by Handlers	1.395
Total of All Costs	2.04
Total Costs Less Cost of Production	1.69

- /1. Cost of inspection is 1-1/2¢, about 1/3 of the total is inspected.  
/2. Applies to Twin Cities, Kansas City, and contiguous territory. Add 7¢ for shipments to Chicago, St. Louis, San Antonio, and nearby cities. Increased freight rates will add about 5¢ to all rates in 1938.  
/3. Charge is 8¢, about 1/2 the shipments stand this charge.

Source of data: Compiled by James E. Maxwell, Assistant Agricultural Economist, General Crops Section, Field office, Portland, Oregon.



Table VI

Purchasing Power Parity of Washington Celery

(Dollars Per Crate)

Year	Farm Prices	Index of Prices Paid by Farmers /1	Parity Price	Actual Price Above (+) or Below (-) Parity	Actual Price in Percent of Parity
	1	2	3	4	5
	dollars	percent	dollars	dollars	percent
1928 Average	1.75	100.0	1.75	--	100.0
1930	1.50	93.5	1.64	- .14	91.5
1931	2.00	80.0	1.40	+ .60	142.8
1932	1.15	69.0	1.21	- .06	95.0
1933	1.30	70.3	1.23	+ .07	105.7
1934	.85	79.4	1.39	- .54	61.2
1935	1.70	80.6	1.41	+ .29	120.6
1936	1.00	80.0	1.40	- .40	71.4
1937	1.10	83.9	1.47	- .37	74.8
1938		81.3/2	1.42		

/1. 1928 = 100 (155 on 1910-14 base).

/2. January-March average.

Source of data: U. S. Dept. Agr., Bur. Agr. Econ.

Col. 1: Division of Crop & Livestock Estimates, Commercial Truck Crops for Shipment; Celery, December 18, 1936 and December 1937 issue of Crops and Markets. Price is for rough packed crate of celery at the car door.

Col. 2: Index of prices paid by farmers for living and production purposes, average of total United States. Does not include taxes paid or interest on indebtedness. Div. Stat. & Hist. Research.

Col. 3; Col. 2 times \$1.75, the farm price during the base period.

Col. 4; Col. 1 minus Col. 3.

Col. 5; Col. 1 divided by Col. 3.

in the base period. Actually only \$1.00 was received which is approximately 71 percent of parity. The situation improved slightly in 1937, when growers received 75 percent of parity.

#### Terminal Market Prices

During 1937, weekly prices for Washington celery in Kansas City ranged from \$2.00 to \$3.00, and averaged \$2.40. In Minneapolis the range was from \$2.34 to \$2.75, with an average of \$2.52.

None of these prices are lower than the total costs of harvesting and marketing, which is approximately \$1.70. In fact, no individual quotations on the Minneapolis market were below this figure and only three such quotations, shown as "few of fair quality", were found on the Kansas City market.

However, during periods of distress it is quite possible for market prices to fall below harvesting and marketing costs. Daily prices at Minneapolis are shown in table VII.

#### Marketing Agreement Provisions as they Apply to Western Washington Celery

The proposed revised western Washington vegetable agreement is to include celery as an additional commodity. Standard provisions for regulation of volume by proration and restriction of relatively undesirable grades, or price-depressing sizes, are included.

The occasion when any of these regulations would be of benefit to growers would be unusual, particularly in regard to volume regulation, as the market territory for Washington celery is almost surrounded by other producing states, many of which have a considerably larger volume than Washington.

In regard to restriction of grades and sizes, especially as to grades,



Table VII

Wholesale Prices of Washington Celery at Minneapolis, Minnesota  
(September-November, 1937)

Date	Dollars Per Crate/1	Weekly Unloads	Average Price For Week	Date	Dollars Per Crate /1	Weekly Unloads	Average Price For Week
	1	2	3		4	5	6
	dollars per crate	<u>cars</u>	dollars per crate		dollars per crate	<u>cars</u>	dollars per crate
1937				1937			
Sept. 21	2.75			Oct. 25	2.50-2.75		
22	2.75			26	2.50-3.00		
23	2.75			27	2.50-3.00		
24	2.75			28	2.50-3.00		
25	2.75			29	2.50-2.60		
Sept. 21-25		2	2.75	30	2.50-2.60		
Sept. 27	2.60			Oct. 25-30		9	2.66
28	2.50-2.65			Nov. 1	2.50-2.60		
29	2.50-2.65			2	2.50-2.60		
30	2.50-2.65			3	2.50-2.60		
Oct. 1	2.50-2.65			4	2.50-2.60		
2	2.50-2.65			5	2.50-2.60		
Sept. 27-Oct.2		4	2.58	6	2.50-2.60		
Oct. 4	2.50-2.65			Nov. 1-6		12	2.55
5	2.50			Nov. 8	--		
6	2.50			9	--		
7	2.50			10	2.50-2.75		
8	2.50			11	2.25		
9	2.50			12	2.25		
Oct. 4-9		2	2.51	13	2.25		
Oct. 11	2.25-2.50			Nov. 8-13		6	2.34
12	2.50			Nov. 15	2.25		
13	2.25			16	2.25		
14	2.25-2.35			17	--		
15	2.25-2.35			18	--		
16	2.25-2.35			19	--		
Oct. 11-16		8	2.38	20	--		
Oct. 18	2.25-2.35			Nov. 15-20			2.25
19	2.25-2.75			Nov. 26	2.75		
20	2.50-2.75			27	2.75		
21	2.40-2.75			29	2.75		
22	2.40-2.75			30	2.50		
23	2.50-2.75			Nov. 26-30			2.69
Oct. 18-23		9	2.53	Average for Season 52			2.52

/1. One-half crates 24 and 26 inches high, 2-1/2 to 3-1/2 dozen stalks per crate.  
Source of data: U. S. Dept. Agr., Market News Service, Daily Market Reports.

there are greater possibilities of benefit. With a long haul to market, which causes high marketing costs, only good quality celery can bring great enough returns to justify shipping it. In case it is anticipated that the poorer quality when sold will cause a loss of cash outlays, it would be of direct benefit to growers to prohibit such celery to move into interstate commerce.